AMENDMENTS TO THE CLAIMS

Presented below is a complete set of claims with current status indicators.

1. (previously presented) In an implantable cardiac stimulation device which paces the atria of a heart on demand at the end of an escape interval in a single-chamber atrial pacing mode, a system that dynamically establishes a maximum pacing rate comprising:

a detector that detects an atrial activation of the heart and an R wave of the heart corresponding to the detected atrial activation; and

a rate limit circuit that determines a minimum RA interval having a beginning that corresponds with the R wave and an end; determines if the end of the escape interval is before the end of the minimum RA interval and if it is, extends the escape interval so that its end coincides with the end of the minimum RA interval.

2. (original) The system of claim 1 wherein the device is a single-chamber atrial pacing device, wherein the R wave is a far field R wave, and wherein the detector includes an atrial sense channel that senses the far field R wave.

3. (previously presented) The system of claim 1 wherein the device is a dual-chamber pacing device having a ventricular sense channel and an atrial sense channel and wherein the detector uses the ventricular sense channel to detect the R wave.

4. (original) The system of claim 1 further comprising a blanking circuit that disables detection by the detector during a blanking interval commencing with detection of the atrial activation and ending prior to detection of the R wave.

5. (original) The system of claim 4 wherein the blanking circuit dynamically varies the blanking interval.

6. (original) The system of claim 4 wherein the blanking interval has a first duration responsive to an intrinsic atrial activation and a second duration responsive to a paced atrial activation.

7. (original) The system of claim 6 wherein the first duration is shorter than the second duration.

8. (previously presented) The system of claim 1 wherein the device includes a refractory circuit that provides a refractory period following detection of the atrial activation and wherein the system further comprises a refractory control that sets a revised refractory period responsive to detection of the R wave.

9. (original) The system of claim 1 wherein the rate limit circuit varies the minimum RA interval responsive to pacing rate.

10. (original) The system of claim 1 further comprising a morphology detector that confirms detection of the R wave.

11. (previously presented) The system of claim 1 further comprising a blanking circuit that disables detection by the detector during a blanking period beginning after the detection of the R wave and ending after a T wave following the R wave.

12. (previously presented) In a cardiac stimulation device which paces the atria of a heart on demand at the end of an escape interval in a single-chamber atrial pacing mode, a method of dynamically establishing a maximum pacing rate comprising:

detecting an atrial activation of the heart;

detecting an R wave of the heart corresponding to the detected atrial activation;

determining a minimum RA interval having a beginning that corresponds with the R wave and an end; and

determining if the end of the escape interval is before the end of the minimum RA interval and if it is, extending the escape interval so that its end coincides with the end of the minimum RA interval.

13. (previously presented) The method of claim 12 wherein detecting an R wave comprises sensing the R wave with a ventricular electrode configuration.

14. (previously presented) The method of claim 12 wherein the device is a single-chamber atrial pacing device, wherein the R wave is a far field R wave, and wherein detecting the far field R wave comprises sensing with an atrial electrode configuration.

15. (previously presented) The method of claim 12 further comprising blanking detection during a blanking interval commencing with detection of the atrial activation and ending prior to detection of the R wave.

16. (original) The method of claim 15 further comprising dynamically varying the blanking interval.

17. (original) The method of claim 12 wherein the device includes a refractory circuit that provides a refractory period following detection of the atrial activation and wherein the method further comprises setting a revised refractory period responsive to detecting the R wave.

18. (original) The method of claim 12 wherein determining comprises determining the minimum RA interval based upon pacing rate.

19. (previously presented) In a cardiac stimulation device which paces the atria of a heart on demand at the end of an escape interval in a single-chamber atrial pacing mode, a system for dynamically establishing a maximum pacing rate comprising:

detecting means for detecting an atrial activation of the heart and an R wave of the heart corresponding to the detected atrial activation; and

a rate limit means for determining a minimum RA interval having a beginning that corresponds with the R wave and an end; determining if the end of the escape interval is before the end of the minimum RA interval and if it is, extending the escape interval so that its end coincides with the end of the minimum RA interval.

20. (original) The system of claim 19 further comprising blanking means for disabling detection by the detecting means during a blanking interval commencing with detection of the atrial activation and ending prior to detection of the R wave.

21. (previously presented) The system of claim 20 wherein the blanking means comprises means for dynamically varying the blanking interval.

22. (previously presented) The system of claim 20 wherein the blanking interval has a first duration responsive to an intrinsic atrial activation and a second duration responsive to a paced atrial activation.

23. (original) The system of claim 19 and further comprising a refractory circuit that provides a refractory period following detection of the atrial activation and wherein the system further comprises refractory control means for setting a revised refractory period responsive to detection of the R wave.